## MIDAS

#### Models for Infectious Disease Agent Study

National Institute of General Medical Sciences National Institutes of Health Department of Health and Human Services

### Agenda

- NIH Context
- Purpose
- Organization of MIDAS
- Roles of Participants
- What is the Steering Committee Going to Do Anyway?

#### NIH Biodefense

#### Involves all Institutes and Centers

#### Concerns

- Biological / Infectious
   Agents and Toxins
- Chemical Agents
- Nuclear and Radiological Agents
- Mental and Behavioral Health

#### Focuses on

- Basic Research
- Diagnosis
- Intervention
- Education and Training

#### NIAID - \$1.6 billion

- 8 Regional Centers of Excellence
- 11 National and Regional Biocontainment Labs
- 5 Cooperative Centers for Translational Research on Human Immunology and Biodefense

- Research on CategoryA microbes
- Genomic sequencing
- Vaccine Development
- Drug Development
- Diagnostics

#### Other Institutes

- Genomics and Proteomics
  - NHGRI, NLM, NIGMS NIAID,...
- Informatics
  - NLM, NCI, NIGMS, NIAID
- Diagnostics and Imaging
  - NIBIB, NCRR, NIDND, NIDCR

- Clinical Resources
  - NCRR, NIGMS, NHLBI, various population resources
- Modeling
  - NIGMS

# MIDAS

will consist of an informatics center and network of multidisciplinary scientists conducting computational and mathematical research to improve the ability to detect, control, and prevent emerging infectious diseases

#### Purpose of MIDAS

- Improve the nation's ability to respond to biological threats promptly and effectively by
  - Developing useful computational tools and models of emerging infectious diseases
  - Building models in response to real or anticipated outbreaks
  - Making tools and models available to policymakers, public health professionals, and researchers

#### Principles

- Partnership between NIH and scientific community
- Pilot program opportunity to redesign
- Multidisciplinary
- > Small interacting research groups
- Sophisticated informatics group
- Many opportunities for interaction and sharing

#### A Word About Data

- MIDAS does not fund primary laboratory or clinical research
- MIDAS does support research using existing information, datasets, or simulated data
- It is a requirement that all data be deposited in the Informatics Center
- It is a requirement that all products be deposited and made available

### Scientific Themes

#### Scientific Objectives

- Development, validation, and implementation of models for
  - Transmission of bioterrorism agents or naturally occurring infectious diseases
  - Release, spread, and detection of naturallyoccurring and bioterrorist agents
  - Differential diagnosis of natural outbreaks and bioterrorist attacks

#### Scientific Objectives

- Development, validation, and implementation of models for
  - Distribution and allocation of resources in response to an outbreak
  - Evaluation of the long-term consequences of response strategies
  - ▶ Effects and efficacy of interventions

#### In Case Of Emergency...

- NIGMS may redirect the MIDAS network to conduct research related to scenarios, policy decisions, or events involving an emerging outbreak.
- The Steering Committee will be involved in constructing the appropriate questions and making recommendations to NIGMS.

### Organization of MIDAS

## Cooperative Agreement (U01)

NIH/NIGMS Research Scientist

Scientist has primary leadership and authority to manage project.

NIH acts as a partner and has considerable involvement in setting directions and priorities.

### MIDAS

Research Group

Emory University

Research Group

Johns Hopkins University



Informatics Group

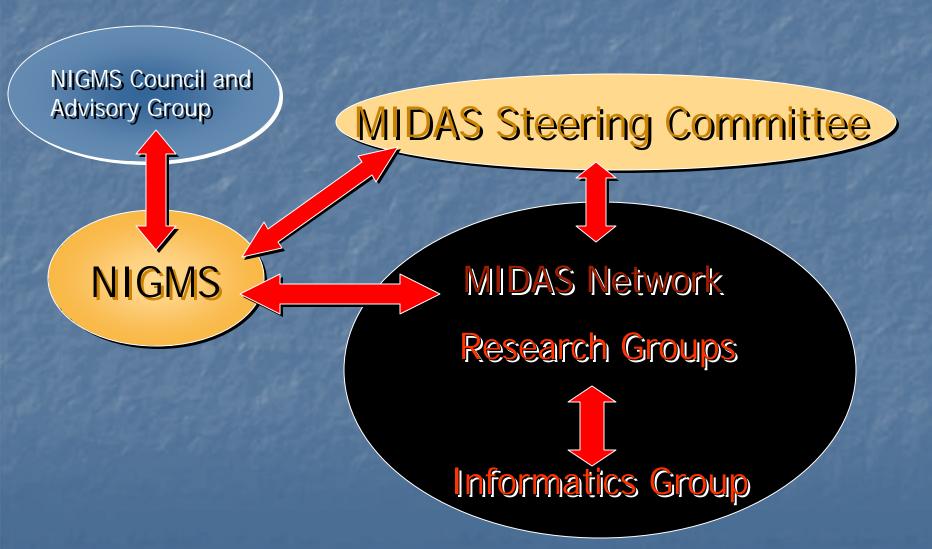
RTI



Research Group

Los Alamos National Labs

## MIDAS



#### Research Groups

- Will conceive, develop, and conduct research relevant to developing mathematical and computational models of emerging infectious diseases
- Must identify data liaison person to interact with Informatics Group
- Must use standard exchange protocols
- Must comply with intellectual property agreement

#### Informatics Group

- Will construct and implement a database and interface for MIDAS information and tools
- Will monitor data for quality, accuracy, completeness, and non-redundancy
- Will facilitate comprehensive sharing of data, models, and tools
- Will generate simulated data
- Will test and validate models

#### NIGMS Council Advisory Group

Advises NIGMS on overall program direction and progress

#### Steering Committee

- Is the main governing body
- Consists of program directors of the informatics and research groups, NIH staff, and outside consultants
- Develops and oversees policy
- > Sets milestones for the Network
- Sets standards for information management
- Alerts NIGMS to scientific opportunities, emerging needs, and impediments
- Considers the views of other researchers
- Establishes subgroups as needed

#### Monitoring

- The Network will meet monthly by conference call
- The Steering Committee will meet at least annually
- Additional meetings can be added as needed.